



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,829	08/15/2001	Eric S. Gilbert	818002 (50239-00001)	1439
25231	7590	05/08/2006	EXAMINER	
MARSH, FISCHMANN & BREYFOGLE LLP 3151 SOUTH VAUGHN WAY SUITE 411 AURORA, CO 80014			POPHAM, JEFFREY D	
			ART UNIT	PAPER NUMBER
			2137	

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/930,829

Applicant(s)

GILBERT ET AL.

Examiner

Jeffrey D. Popham

Art Unit

2137

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-14, 23-25 and 38-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-14, 23-25 and 38-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date: 20060224
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Remarks

Claims 7-14, 23-25, and 38-54 are pending.

Response to Arguments

1. Applicant's arguments, see Remarks, filed 3/3/2006, with respect to the rejection(s) of claim(s) 7-14, 23-25, and 38-54 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made with Morar (U.S. Patent 6,678,822) in view of Kaufman (U.S. Patent 5,497,421), Schneier (Schneier, Bruce, "Applied Cryptography", Second Edition, 1996, pp. 193-194), and/or Zubeldia (U.S. Patent 6,397,224).

Claim Objections

2. Claims 9, 10, 12, 14, 23, 24, 38, 39, and 44 are objected to because of the following informalities: As described in the previous office action regarding claim 7, these claims all have awkward wording, such as "concatenating the personal identification data fields encoded with a seed value", which makes the claims unclear. This could be interpreted in multiple ways, such as stating that the personal identification data fields are previously encoded, and then concatenated with a seed value. A second interpretation is that the personal identification data fields are encoded with a seed value, and then multiple personal identification data fields are concatenated together. Clarification, for example, (in the first interpretation), "concatenating the

Art Unit: 2137

encoded personal identification data fields with a seed value", or (in the second interpretation), "concatenating multiple personal identification data fields, each of which are encoded with a seed value". For purposes of prior art rejection, the examiner has interpreted these claims with the first interpretation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 47 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Morar (U.S. Patent 6,678,822).

Regarding Claim 47,

Morar discloses a system for de-identifying records comprising:

A client computer having an interface for receiving records, wherein the client computer is adapted to locate personal identification data fields in the records, delete at least a portion of the personal identification data fields, and encrypt remaining personal identification data fields to generate encrypted personal identification data fields (Column 8, line 55 to Column 9, line 4; Column 9, lines 42-53; and Column 11, lines 63-65).

Regarding Claim 48,

Morar discloses a mapping file used to locate personal identification data fields in the record (Column 5, line 57 to Column 6, line 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-9, 11-13, 23, 38-44, and 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morar in view of Kaufman (U.S. Patent 5,497,421).

Regarding Claim 7,

Morar discloses a method for de-identification of records by and at a programmed client computer, comprising:

Providing records to the programmed client computer (Column 6, lines 34-52; and Column 8, lines 41-54);

Locating personal identification data fields in each of the records (Column 8, line 55 to Column 9, line 4);

Parsing the personal identification data fields (Column 9, lines 4-14);

Formatting the personal identification data fields (Column 9, lines 4-14; and Column 11, lines 28-32);

Selecting at least a portion of the formatted personal identification data fields (Column 9, lines 42-53);

Deleting any of the personal identification data fields not selected (Column 9, lines 42-53); and

Encrypting the selected personal identification data fields (Column 11, lines 63-65);

But does not disclose that the encryption is one-way encryption.

Kaufman, however, discloses one-way encrypting the selected personal identification data fields (Column 6, lines 37-58). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the hashing techniques of Kaufman into the data obscuring system of Morar in order to strengthen the obscurity/de-identification of the data via multiple hashing and encryption of the data, so that it is computationally infeasible to compute the original data from the hashes, thus making the data even more obscure.

Regarding Claim 23,

Claim 23 is a computer readable media claim that corresponds to method claim 7 and is rejected for the same reasons.

Regarding Claim 8,

Morar as modified by Kaufman discloses the method of claim 7, in addition, Morar discloses obtaining a mapping file and locating personal

identification data fields in each of the records using the mapping file
(Column 5, line 57 to Column 6, line 4).

Regarding Claim 9,

Morar as modified by Kaufman discloses the method of claim 7, in addition, Morar discloses determining if the selected personal identification data fields are to be encoded and encoding the personal identification data fields that are to be encoded (Column 8, line 55 to Column 9, line 53; and Column 11, lines 37-65).

Regarding Claim 11,

Morar as modified by Kaufman discloses the method of claim 9, in addition, Morar discloses that the personal identification data fields are not concatenated with a seed value prior to the one-way encrypting (Column 8, line 55 to Column 9, line 53; and Column 11, lines 37-65).

Regarding Claim 12,

Morar as modified by Kaufman discloses the method of claim 7, in addition, Kaufman discloses that the one-way encrypting step comprises:

One-way encrypting with a first encryption algorithm the data to provide a first encryption result for the data (Column 6, lines 37-58); and

One-way encrypting with a second encryption algorithm the data to provide a second encryption result for the data (Column 6, lines 37-58).

Regarding Claim 13,

Morar as modified by Kaufman discloses the method of claim 12, in addition, Kaufman discloses that the one-way encrypting step comprises concatenating at least a portion of each of the first encryption result and the second encryption result for the data to respectively provide binary string identifiers for the data (Column 6, lines 37-58) and Morar discloses converting the binary strings to alphanumeric strings to provide match codes (Column 7, lines 31-39).

Regarding Claim 38,

Morar discloses a method for de-identification of records comprising:

Locating personal identification data fields in a plurality of records (Column 8, line 55 to Column 9, line 4);

Parsing the personal identification data fields (Column 9, lines 4-14);

Deleting a first portion of the parsed personal identification data fields (Column 9, lines 42-53); and

Encrypting a second portion of the parsed personal identification data fields to generate one or more de-identified records (Column 11, lines 63-65);

But does not disclose that the encryption is one-way encryption.

Kaufman, however, discloses one-way encrypting the selected personal identification data fields (Column 6, lines 37-58). It would have

been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the hashing techniques of Kaufman into the data obscuring system of Morar in order to strengthen the obscurity/de-identification of the data via multiple hashing and encryption of the data, so that it is computationally infeasible to compute the original data from the hashes, thus making the data even more obscure.

Regarding Claim 54,

Claim 54 is a system claim that corresponds to method claim 38 and is rejected for the same reasons.

Regarding Claim 39,

Morar as modified by Kaufman discloses the method of claim 38, in addition, Morar discloses selecting the second portion of the parsed personal identification data fields for one-way encryption (Column 9, lines 42-53).

Regarding Claim 40,

Morar as modified by Kaufman discloses the method of claim 38, in addition, Morar discloses receiving the personal identification data fields with a client computer (Column 6, lines 34-52; and Column 8, lines 41-54).

Regarding Claim 41,

Morar as modified by Kaufman discloses the method of claim 38, in addition, Morar discloses providing the one or more de-identified records

to a server computer (Column 9, line 54 to Column 10, line 4; and Column 12, lines 31-46).

Regarding Claim 42,

Morar as modified by Kaufman discloses the method of claim 38, in addition, Morar discloses formatting the personal identification data fields prior to encrypting a second portion of the personal identification data fields (Column 9, lines 4-14; and Column 11, lines 28-32); and Kaufman discloses that the encryption is one-way encryption (Column 6, lines 37-58).

Regarding Claim 43,

Morar as modified by Kaufman discloses the method of claim 38, in addition, Morar discloses using a mapping file to locate the personal identification data fields in the plurality of records (Column 5, line 57 to Column 6, line 4).

Regarding Claim 44,

Morar as modified by Kaufman discloses the method of claim 38, in addition, Morar discloses determining the second portion of the parsed personal identification data fields to be encrypted in response to deleting the first portion of the parsed personal identification data fields (Column 9, lines 42-53; and Column 11, lines 37-65); and Kaufman discloses that the encryption is one-way encryption (Column 6, lines 37-58).

Regarding Claim 50,

Morar as modified by Kaufman discloses the system of claim 47, in addition, Kaufman discloses that the encrypted data comprise one-way encryption with a first encryption algorithm to provide a first encryption result (Column 6, lines 37-58).

Regarding Claim 51,

Morar as modified by Kaufman discloses the system of claim 50, in addition, Kaufman discloses that the encrypted data comprise one-way encryption with a second encryption algorithm to provide a second encryption result (Column 6, lines 37-58).

Regarding Claim 52,

Morar as modified by Kaufman discloses the system of claim 51, in addition, Kaufman discloses that the one-way encrypting step comprises concatenating at least a portion of each of the first encryption result and the second encryption result for the data to respectively provide binary string identifiers for the data (Column 6, lines 37-58).

Regarding Claim 53,

Morar as modified by Kaufman discloses the system of claim 52, in addition, Morar discloses that the binary strings are converted to alphanumeric strings to provide match codes (Column 7, lines 31-39).

Art Unit: 2137

5. Claims 10, 14, 24, 25, 45, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morar in view of Kaufman and Schneier (Schneier, Bruce, "Applied Cryptography", Second Edition, 1996, pp. 193-194).

Regarding Claim 10,

Morar as modified by Kaufman does not disclose concatenating the encoded data with a seed value to provide seed value identifiers.

Schneier, however, discloses concatenating the encoded data with a seed value (IV) to provide seed value identifiers (Page 194). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the CBC with IV encryption scheme of Schneier into the data obscuring system of Morar as modified by Kaufman in order to ensure that each piece of data is unique by forcing identical plaintext data to encrypt to different ciphertext, while allowing the seed to be sent in the clear, so that anyone can read it.

Regarding Claim 45,

Morar as modified by Kaufman does not disclose concatenating the data that are one-way encrypted with a seed value to provide seed value identifiers.

Schneier, however, discloses concatenating the data that are one-way encrypted with a seed value to provide seed value identifiers (Page 194). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the CBC with IV encryption

scheme of Schneier into the data obscuring system of Morar as modified by Kaufman in order to ensure that each piece of data is unique by forcing identical plaintext data to encrypt to different ciphertext, while allowing the seed to be sent in the clear, so that anyone can read it.

Regarding Claim 49,

Morar as modified by Kaufman does not disclose that at least a portion of the data are encoded with a seed value to provide seed value identifiers.

Schneier, however, discloses that at least a portion of the data are encoded with a seed value to provide seed value identifiers (Page 194). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the CBC with IV encryption scheme of Schneier into the data obscuring system of Morar as modified by Kaufman in order to ensure that each piece of data is unique by forcing identical plaintext data to encrypt to different ciphertext, while allowing the seed to be sent in the clear, so that anyone can read it.

Regarding Claim 14,

Morar discloses a method for de-identification of records by a programmed client computer, comprising:

Monitoring a file directory (Column 6, lines 34-52; and Column 8, lines 41-54);

Detecting presence of a new file in the file directory (Column 6, lines 34-52; and Column 8, lines 41-54);

Obtaining a mapping file for the new file (Column 5, line 57 to Column 6, line 4);

Locating personal identification data fields in records in the new file using the mapping file (Column 8, line 55 to Column 9, line 4);

Parsing the personal identification data fields (Column 9, lines 4-14);

Formatting the personal identification data fields (Column 9, lines 4-14; and Column 11, lines 28-32);

Selecting at least a portion of the formatted personal identification data fields (Column 9, lines 42-53);

Deleting any of the personal identification data fields not selected (Column 9, lines 42-53);

Determining if the selected personal identification data fields are to be encoded (Column 8, line 55 to Column 9, line 53; and Column 11, lines 37-65);

Encoding the personal identification data fields to be encoded (Column 8, line 55 to Column 9, line 53; and Column 11, lines 37-65);

Encrypting the data field by field (Column 11, lines 63-65);

Converting binary strings created from the encoding and encryption to alphanumeric strings to provide match codes (Column 7, lines 31-39);

Wherein de-identified records comprising the match codes are created at a programmed client computer prior to transmission to a server computer (Column 9, line 54 to Column 10, line 4; and Column 12, lines 31-46);

But does not disclose concatenating the personal identification data fields encoded with a seed value to provide seed value identifiers, first one-way encrypting the seed value identifiers with a first encryption algorithm, second one-way encrypting the seed value identifiers with a second encryption algorithm, and concatenating at least a portion of each one-way encryption result from the first one-way encrypting and the second one-way encrypting corresponding to the seed value identifiers to respectively provide binary strings for each of the seed value identifiers.

Schneier, however, discloses concatenating the data encoded with a seed value to provide seed value identifiers (Page 194). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the CBC with IV encryption scheme of Schneier into the data obscuring system of Morar as modified by Kaufman in order to ensure that each piece of data is unique by forcing identical plaintext data to encrypt to different ciphertext, while allowing the seed to be sent in the clear, so that anyone can read it.

Kaufman, however, discloses that the encrypting step comprises:

First one-way encrypting the data (seed value identifiers in this case) with a first encryption algorithm (Column 6, lines 37-58);

Second one-way encrypting the data with a second encryption algorithm (Column 6, lines 37-58);

Concatenating at least a portion of each one-way encryption result from the first one-way encrypting and the second one-way encrypting corresponding to the data to respectively provide binary strings for the data (Column 6, lines 37-58).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the hashing techniques of Kaufman into the data obscuring system of Morar in order to strengthen the obscurity/de-identification of the data via multiple hashing and encryption of the data, so that it is computationally infeasible to compute the original data from the hashes, thus making the data even more obscure.

Regarding Claim 24,

Claim 24 is a computer readable media claim that corresponds to method claim 14 and is rejected for the same reasons.

Regarding Claim 25,

Morar as modified by Kaufman and Schneier discloses the computer readable media of claim 24, in addition, Morar discloses that the programmed client computer comprises a mapper program, a parser

program, a formatting program, and an encoding program (Column 5, line 57 to Column 6, line 4; Column 8, line 55 to Column 9, line 53; and Column 11, lines 28-65).

6. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morar in view of Kaufman, further in view of Zubeldia (U.S. Patent 6,397,224).

Morar as modified by Kaufman does not disclose comparing the one or more de-identified records with one or more master records to determine linkage between the one or more de-identified records and the one or more master records.

Zubeldia, however, discloses comparing the one or more de-identified records with one or more master records to determine linkage between the one or more de-identified records and the one or more master records (Column 6, line 66 to Column 7, line 16; Column 7, line 64 to Column 8, line 6; and Column 8, line 62 to Column 9, line 4). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the anonymous linking system of Zubeldia into the data obscuring system of Morar as modified by Kaufman in order to allow the records to be de-identified, but still provide a way to link the de-identified files, so that research may be conducted on the data without releasing any identification information.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey D. Popham whose telephone number is (571)-272-7215. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571)272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey D Popham
Examiner
Art Unit 2137


EMMANUEL L. MOISE
SUPERVISORY PATENT EXAMINER